

STATEMENT OF WORK

AVIATION SAFETY REPORTING SYSTEM (ASRS) AND RELATED SYSTEMS

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National Aeronautics and Space Administration
Ames Research Center
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1.0. INTRODUCTION

The National Aeronautics and Space Administration (NASA) Ames Research Center (ARC) operates and manages the Aviation Safety Reporting System (ASRS) and other safety reporting systems that are modeled to function as voluntary, independent, confidential systems in aviation, railroad transportation, and potentially other domains, such as offshore oil, firefighting, transportation security, criminal justice, energy, ground transportation, maritime, and health care safety reporting during the contract period of performance.

In aviation, the mission of the ASRS since 1976 has been to provide information concerning current and potential deficiencies and discrepancies in the operational performance of the National Airspace System and to maximize the effective use of that information to further aviation safety and system planning. The ASRS has two primary aspects: the maintenance and operation of a voluntary, independent, confidential incident reporting program, and research and development using incident reports to support improvements in the performance and safety of the current and future aviation system. The ASRS functions through an Interagency Agreement (IAA) with the Department of Transportation's Federal Aviation Administration (FAA). The ASRS program is nationally and internationally recognized as an effective and trusted model for confidential safety reporting. As a result of this reputation, other Government agencies, and private and public organizations have requested NASA's assistance in establishing new systems of confidential reporting for the purpose of improving safety.

The Confidential Close Call Reporting System (C³RS) was established in 2010 through an IAA between NASA and the Department of Transportation's Federal Railroad Administration (FRA). C³RS is designed to improve railroad safety by collecting and studying reports detailing unsafe conditions or near miss events in the railroad industry. Railroad personnel can submit reports to C³RS when they are involved in or observe an incident or condition where railroad safety may have been compromised. All reports sent to C³RS are voluntary and are held in the strictest confidence. In addition to confidentiality, the FRA and participating railroad carriers offer further incentives to those who submit reports to C³RS. Through agreements with the labor organizations, those who report are provided protection from discipline for qualifying events. The FRA and railroad carriers' willingness to provide immunity is an important indication of the value they place on the constructive safety information gathered through incident reporting to C³RS.

This Statement of Work (SOW) is currently applicable for two systems: 1) the ASRS, and 2) the C³RS. The requirements to be performed are described in the following sections.

2.0. SCOPE OF WORK

The Contractor shall operate and maintain ASRS and C³RS, and other potential reporting systems (if they are developed). The Contractor shall provide flexible, responsive, coordinated, and comprehensive support services for ASRS and Related Systems. The Contractor shall manage and administer all work to be performed, and assure the availability of qualified personnel and resources.

The following descriptions represent the Government's best effort to project future support requirements.

2.1 PERSONNEL, FACILITY, AND INFORMATION TECHNOLOGY (IT)

2.1.1. ASRS and Related Systems Contract Management Requirements

For each reporting system, the Contractor shall provide management staff who have the qualifications, experience, education, and expertise to maintain a continual required communication regarding their particular reporting system with industry, numerous Governmental agencies, the public, and other venues as required, on the status of the ASRS and Related Systems program.

In order to preserve the integrity and independence of the ASRS and Related Systems program, the contract contains an Organizational Conflicts of Interest clause in Section H. Any potential conflicts of interest will be reviewed by the CO. NASA will individually approve any requests for exceptions on a case-by-case basis. In addition, all ASRS and Related Systems Contractor employees, subcontractor(s) personnel, and consultants shall sign Non-Disclosure Agreements to protect the confidentiality of all reporting systems' data and information. The Contractor shall provide copies of these agreements to the CO. All contractor personnel shall be Homeland

Security Presidential Directive HSPD-12 approved and background checks completed by NASA Ames Research Center in order to obtain an official NASA ARC Contractor badge (in accordance with contract Section I, Personal Identity Verification of Contractor Personnel, FAR 52.204-9.

Due to the sensitive and confidential nature of the information being handled by the Contractor on a daily basis, the Contracting Officer has determined that the requirements of the agency, including security requirements, cannot be met if telecommuting is permitted. However, the Contractor may propose telecommuting for special circumstances that must be approved in advance by the Contracting Officer.

The Contractor shall provide an ASRS and Related Systems Program Manager for the overall contract. The ASRS and Related Systems Program Manager will assure that all Project Managers are managing each project in accordance with practices and principles of the ASRS model.

The ASRS and Related Systems Program Manager shall provide overall contract management of the Contractor's efforts and shall provide a responsible interface with the Government for ASRS, C³RS, and future work with other domain systems, if applicable. The Program Manager shall:

- a) Provide a well-defined, stable organizational structure with clear lines of authority that provides a single point of contact for interface to the CO, the Contracting Officer's Representative (COR) and the NASA ASRS Program Director.
- b) Plan, manage, control, and coordinate contract management and technical requirements, and any task orders as issued by the CO, manage the resources allocated by NASA for specific requirements in a manner to ensure goals are reached in accordance with agreed upon milestones; and ensure that personnel have the training and required expertise to operate and maintain the ASRS and Related Systems.
- c) Identify conflicting and/or complementary needs among the SOW tasks, and provide proposed approaches to leveraging resources, to ensure that conflicts are resolved and that needs are met.
- d) Provide management supervision and procedures to ensure compliance with applicable Government policies, regulations, and contractual requirements for all work performed under this contract.
- e) Ensure that all contract employees complete relevant training, including Safety and Annual IT Security Training as detailed in the SOW and contract.
- f) Provide property management to ensure accountability for Government-provided property and be responsible for annual inventory surveys and required reporting.
- g) Ensure IT stability, continuity, security, and reliability of all IT interfaces with the reporting systems; including accessing corporate resources for critical events or situations.
- h) Ensure facility is safeguarded and all processes are in accordance with the SOW to ensure a high industry confidence level in ASRS security.

The Contractor shall support the business and administrative operations and contract administration for the ASRS, C³RS, and other potential domains.

- a) Provide contract management support necessary to manage and to track the labor hours, materials, and associated costs for contract performance. Deliver NASA financial management reports, technical progress, and other reports as required by contract Section J.1(a) Attachment 2, Contract Data Requirements List (CDRL).
- b) Support administrative operations to provide tasks such as inventory, phone call tracking, customer coordination for meetings, shipments of materials, report process tracking, ID strip maintenance, monitoring of facility security plan, and other administrative tasks described in the SOW.

2.1.2. ASRS and Related Systems Technical Personnel

The Contractor shall provide project management for each related operational system. The management for each operational system must have a thorough understanding of safety issues within each of their respective domains. Managers shall be expected to have the skills and experience required in their specific domains (aviation, railroad, etc.) to credibly represent the reporting systems to Government and industry organizations.

The Contractor shall provide Expert Analysts for each operational reporting system. The Contractor shall maintain within its facility a resume for each of its analysts and professional staff that may be reviewed by the NASA Program Director, Contracting Officer (CO) and/or the Contracting Officer's Representative (COR). Each Expert Analyst shall have the minimum professional qualifications as listed in SOW Appendix, Section 5.4. Analysts shall perform the functions as describe in SOW Section 2.2, Operation and Maintenance of the ASRS, and SOW Section 2.5, Operation and Maintenance of C³RS, and in other future domain operations if applicable.

The Contractor shall also provide support in the following areas:

- Research methodology, human factors expertise, and basic statistics.
- Technical writing, editing, desktop publication, computer graphics, and presentation design, including multi-media.
- Very large database management, computer sciences, information technology, statistical analyses, IT security, and database exploration. (See Section 2.1.4 for specific IT hardware/ software systems to be managed)

2.1.3. ASRS and Related Systems Facility

- a) Location - The Contractor shall provide a facility (approx. 9,000 sq. ft.) within five (5) miles to NASA Ames Research Center (ARC), Moffett Field, California 94035. This proximity requirement is due to the amount and frequency of significant interactions between the Contractor personnel, NASA personnel, NASA programs, and facilities at NASA ARC. Examples of the required interactions include the daily pickup of mail from the official U.S. Postal Service P.O. Boxes for each reporting system at the Moffett Field Post Office; the requirement to mail ID strips (SOW Sections 2.2.11 and 2.5.11) through only the NASA Ames onsite mailroom, Analyst participation in many of the aviation safety research projects under study by the Human Systems Integration Division at ARC; and the civil servants, specifically the NASA ASRS Program Director that have daily duties both at ASRS/ C³RS and NASA ARC that requires frequent travel between the two locations.
- b) Facility Requirements - The Contractor shall provide a secure office space ensuring that all sensitive information is protected (see SOW 5.3). The facility shall have a functioning security system as approved in the ASRS and Related Systems Facility Security Plan (see CDRL Section J.1(a)2 Item 19). In addition, all Expert Analysts who process the reports shall have the capability to make phone calls that ensure privacy and confidentiality. Any identifying phone records shall be kept confidential, with limited access granted in accordance with the ASRS and Related Systems Facility Security Plan, and managed in accordance with Incident Report Maintenance (see SOW Section 2.2.13).

The Government shall provide the Contractor facility with secure data communications from the Contractor facility to ARC. NASA IT Security requirements will be maintained by the Contractor. The Contractor facility shall provide two on-site meeting rooms for simultaneous, small (6 person) and large (at least 15 person) meetings. These rooms shall have secure access for staff, visitors, and NASA personnel.

The Contractor shall be prepared for visits from the appointed members of the NASA ASRS Technical Steering Group (TSG) for periodic unannounced security evaluations. Currently, the ASRS represents the confidentiality interests of pilots, air traffic controllers, cabin crews, dispatchers, maintenance, ground crew and other reporters.

- c) Visitors - In accordance with the Contractor's ASRS and Related Systems Facility Security Plan the Contractor shall provide controlled accessibility to all visitors and maintain continuous on-site visitor records. Due to the unique and successful operation of the ASRS for over 39 years, NASA often sponsors both international, domestic, government and non-governmental visitors to study the operation of ASRS and C³RS. The Contractor shall provide a courtesy work area, in compliance with the ASRS and Related Systems Facility Security Plan for these occasional NASA-approved visitors.
- d) Liaison Offices - The Contractor shall provide individual, secure office spaces for two NASA personnel directly related to the ASRS and other related programs (e.g., NASA ASRS Program Director). This office space shall permit unrestricted access to the Contractor facility. The office space provided to the NASA personnel shall be equal to the Contractor personnel performing equivalent management tasks. Unless otherwise supplied by the Government, the Contractor shall provide telephone service and office supplies for NASA personnel. NASA's reputation and responsibility for the services provided by these highly visible programs requires continuous liaison in the daily operation of the programs.

2.1.4. ASRS and Related Systems Information Technology (IT)

- a) Server Requirements - The Contractor shall maintain all Government-provided systems on Government-provided servers. Currently, all ASRS systems reside on commodity hardware running industry standard operating systems and application software. The ASRS Database Online (DBOL) uses the Microsoft .NET framework and Oracle 10g database. The ASRS and C³RS Analyst Workbench report processing applications use Microsoft .NET with Oracle 11g database and Python with PostgreSQL 9 database. An inventory of Government-provided servers and computers is included in the Government Furnished Equipment (GFE) List in contract Section J.1(a) Attachment 3. An inventory of Government-provided application software is included in the Government Furnished Computer Software (GFCS) List in contract Section J.1(a) Attachment 3.
- b) Commercial Off The Shelf (COTS) Software – Some COTS software licenses have already been purchased and will be available to the contractor at no cost. These include Microsoft Office, Microsoft Visio, Adobe Creative Suite, FileMaker Pro, and Adobe Acrobat. Some software licenses will require transfer from the previous contractor as they have been licensed under NASA and the name of the current contractor. These licenses include SurveyMonkey, Balsamiq Mockups, and other software-as-a-service products and may require ongoing licensing fees. For web development, the software in use includes Adobe Creative Suite, Microsoft products, and various open source development tools. For Topical Research that requires additional information to the original report for a special study (“Supplemental Questions”), SurveyMonkey is currently in use. NASA will notify the Contractor when upgraded versions or additional software requirements are needed. The Contractor shall notify NASA when it identifies other upgrades or alternative software before purchase. Such software shall be purchased in the name of the Government. A complete inventory of Government-provided commercial software is included in the Government Furnished Computer Software (GFCS) List in contract Section J.1(a) Attachment 3.
- c) Custom Software - The Contractor shall maintain custom software provided by the Government to facilitate operation and maintenance of the reporting system processes and databases (e.g., Secure Electronic Report Submission, Analyst Workbench, Multiple Report Matching, and other related components).
- d) IT Security - The Contractor shall provide a secure environment for all computer hardware, software, and networks as specified in the ASRS and Related Systems IT Security Management Plan, (see CDRL, Section J.1(a)2 Item 14). The IT systems shall meet NASA and the federal government requirements through its Certification and Accreditation process and others as required. (contract Section I.1, NFS 1852.204-76, Security Requirements for Unclassified Information Technology Resources)
- e) Extensions and Enhancements - The Contractor shall propose, obtain NASA approval, and perform tasks related to the modernization and enhancement of the reporting systems in order to produce long-term efficiencies in report processing and to make the ASRS and other databases appropriately accessible and integrated with other safety resources specific to area domain (aviation, railroad, etc.). These enhancements include on-going improvements to the current capability and error-free access to the secure electronic submission of reports, electronic information sharing, automated text search, and data management analysis software tools (e.g., Analysts Workbench software).
 - 1) ASRS receives reports from pilots, air traffic controllers, cabin crews, dispatchers, maintenance, ground crew and other reporters. In addition to these reports the airline Aviation Safety Action Programs (ASAP) and Air Traffic Safety Action Program (ATSAP) submit safety reports to ASRS through secure electronic data transmission protocols developed by NASA and paper reports through the official ASRS P.O. Box. Efficient processing, de-identification and report management is a major requirement of this work. Several ASAP systems are currently evolving from paper submission to secure electronic data transmission between the airline programs and ASRS. The Contractor will assist in streamlining these airline ASAP and ATSAP report submissions.
 - 2) C³RS receives reports from all railroad crafts (Transportation, Mechanical, Engineering). Therefore reports are submitted to NASA C³RS from personnel such as conductors, engineers, carmen, signal maintainers, etc. Only railroad carriers that have signed Implementing Memorandum of Agreements (IMOU) with the FRA are participating.

- f) Software Deliverables – Contractor shall deliver all electronic databases, websites, software tools/algorithms/documentation and other software developments/improvements in source and object code format.

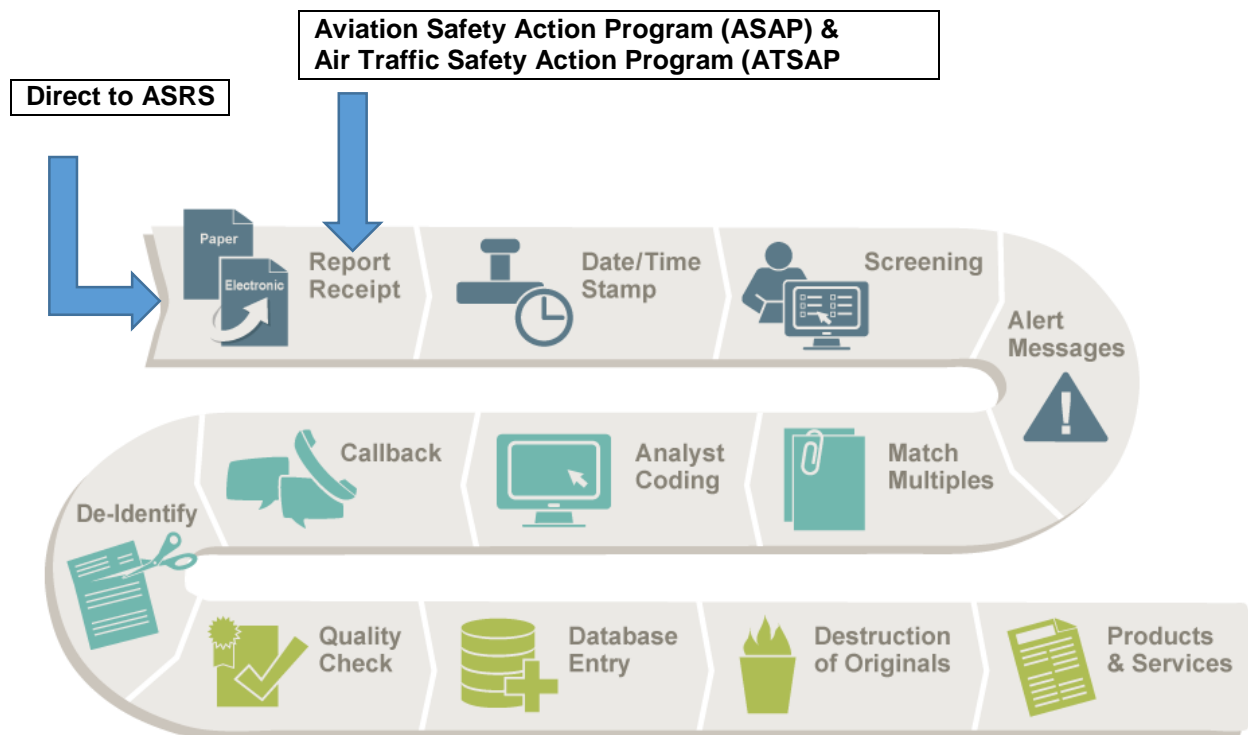
2.2. OPERATION AND MAINTENANCE OF ASRS

The ASRS is a voluntary process wherein pilots, air traffic controllers, dispatchers, cabin crew, mechanics, and any other individual associated with the operation of the aviation system may report aviation incidents or potential safety hazards. This model of a confidential safety reporting system includes the processing of reports, specific de-identification protocols to protect the identity of the person reporting, identification of safety hazards, analysis of data (qualitative and quantitative), operation and maintenance of large databases, and presentation of findings based on the accumulated safety data and information.

Confidentiality of the reporter is the most critical element of success for these systems. The Contractor shall, at all times during the performance of this contract, protect and preserve the confidentiality of the reporter and any third party references (e.g., airline company, names of individuals involved, etc.). For aviation, legal requirements are described in the original Federal Register Notices, FAA/NASA Interagency Agreements and Memorandum of Agreements (MOAs), FAA Advisory Circular 00-46E and 14 CFR 91.25. The FAA Advisory Circular 00-46E is available on the ASRS website <http://asrs.arc.nasa.gov> under Program Information / Immunity Policy.

The simplified production flow chart of the current report processing methodology is presented below. The processes apply to all of the reporting systems under this SOW. The processing steps identified in the flowchart are monitored and tracked by the current version of the ASRS Analyst Workbench and supporting systems. The SOW will address each system separately and in the instances where a process may differ between the reporting systems, these will be noted in the separate sections addressing ASRS and C³RS. Therefore, the SOW will first describe the requirements of the ASRS. These requirements may directly apply with minor exceptions to the C³RS and future reporting systems.

REPORT PROCESSING FLOW



- 2.2.1. ASRS Reporting Forms** - The ASRS incident reports are submitted by pilots, air traffic controllers, maintenance technicians, flight attendants, dispatchers, ground personnel, and other reporters on NASA ARC forms 277 A-D. Although use of the NASA forms are not mandatory for submission and reports may be submitted in alternative forms (e.g., letters), the majority of reports are voluntarily submitted on these forms, either through the US Postal Service or by secure electronic submission via the ASRS website or direct secure report transmission from airline ASAP and air traffic controller ATSAP programs. In some instances, the report submissions from airline ASAP or air traffic controller ATSAP are provided through unique formats used by these programs and subsequently require mapping to ASRS fields and data structures. The reporting forms can be accessed electronically at the ASRS website, <http://asrs.arc.nasa.gov>. However, the postage-paid, paper forms are provided by NASA ASRS or can be found in some FAA facilities. The Contractor shall provide reporting forms inventory, tracking of report form distribution, and accomplish restocking requests. The Government provides printing and mailing of paper reporting forms.
- 2.2.2. ASRS Mail Pickup of Reporting Forms** - The Contractor shall obtain incident reports on a daily working day (WD) basis via a secure method from the ASRS Post Office Box, as defined in the Contractor's ASRS and Related Systems Facility Security Plan. The annual fee for the Post Office box located at the Moffett Field Post Office, California 94035 is currently \$266. Weekends and federal holiday mail pick-up is excluded. These reports are entered into the ASRS Analyst Workbench for processing. The number of paper reports submitted to the ASRS in 2014 was about 1% of the 90,100 annual total received.
- 2.2.3. ASRS Receipt of Secure Electronic Reporting** – The Contractor shall obtain electronic reports from an encrypted enclave at NASA ARC and internal servers. These reports are received from the ASRS website and ASAP/ATSAP submissions. These reports shall be obtained each WD; excluding weekends and Federal Holidays, and entered into the automated ASRS Analyst Workbench for processing. The number of electronic reports submitted to the ASRS in 2014 was about 99% of the 90,100 annual total received.
- 2.2.4. ASRS Date Stamping of ID Strips** - Upon receipt, the Contractor shall date stamp each report with the date of receipt on the ID Strip in the upper right-hand corner. Once analysis is complete, this top portion of the reporting form will be severed and returned as proof of submission to the address provided by the person submitting the report. This will remove the reporter's name permanently from the report. Internally, the date of receipt is recorded with the Accession Number (ACN) assigned to that report. For cases in which the reports are submitted through ASAP, the date in which the reporter submitted the report to ASAP might be one or more days before ASAP forwards that report to ASRS. In such cases both dates are recorded with the ACN by the ASRS Analyst Workbench. An automated date stamp machine will provide the date stamp of paper ID Strips. The date stamping of paper ID Strips for electronically submitted reports will be an electronic facsimile date stamp that has been created uniquely for NASA ASRS. The Government will provide both paper and electronic date stamp to the Contractor. The ASRS date stamp emblem is unique to ASRS and identifiable for FAA inspection and National Transportation Safety Board (NTSB) Administrative Law Judge (ALJ) verification as proof of timely submission.
- 2.2.5. ASRS Internal Report Tracking System** - The Contractor shall maintain a tracking system that provides the current status of each incident report as it is processed through the system. This tracking system shall meet the following objectives:
- Permit identification of each reviewer and handler throughout the processing stages,
 - Continue report numbering in succession from the previous year's reports utilizing the Accession Number (ACN) system previously established, and
 - Maintain the confidentiality of the person reporting throughout report processing, including no numerical identification annotated on the ID strip or any other identity material maintained. The Accession Number (ACN) is never matched or provided to the person reporting. The Contractor shall be responsible for reporter and third party confidentiality. Any conflict or question concerning confidentiality shall be provided to the NASA ASRS Program Director for resolution within 2 hours of discovery.
- 2.2.6. ASRS Incident Report Screening and Classification** - The Contractor shall read and evaluate each incoming report for hazard identification and classification into defined, predetermined processing and

coding categories. This process requires expert operational judgment and decision-making skills. The Contractor shall ensure that two ASRS Expert Analysts with experience in the relevant functional area of the report content accomplish this screening independently. The Contractor shall complete the screening of each incident report no more than five (but preferably under three) working days after Post Office Box or electronic receipt of the incoming report, unless prior approval is received from the NASA Program Director. The screening and classification processes for ASRS reports are described in the following paragraphs:

ASRS Report Classifications - The Contractor Expert Analysts shall screen each incoming report for classification into the following categories that are described below:

- a) **Full Form** – Incoming reports selected for Full Form processing are input into the ASRS Database following analysis by ASRS Expert Analysts. Full Form processing yields a full and lengthy evaluation that captures the safety information provided in the report and is coded into approximately 1,200 coding fields. The ASRS Database Fields are available for review on ASRS website under the Database Online (DBOL) feature. Not all Full Form reports are analyzed, processed and entered into the ASRS Database. The percentage of Full Form reports that are analyzed, processed and entered into the ASRS Database shall be determined by a target volume formulated by NASA in consultation with contractor and availability of funds. A Government formula for determining the target volume will be part of consultation concerning target volume. It is a Government goal to increase this percentage with efficiencies in processing. In 2014, the total number of incoming reports received was 90,100. The types of incoming reports that are processed for Full Form analysis are:
 - 1) **Mandatory** - These are predetermined significant events (e.g., Near Mid-Air Collision, Ground Conflict Critical, Controlled Flight Toward Terrain, Loss of Aircraft Control, and Aircraft Equipment Problem Critical) listed in the Analyst Workbench software. This list was agreed upon between NASA and FAA to be de-identified and processed to the ASRS Database. In 2014, ASRS processed about 2,000 Mandatory reports into the ASRS Database.
 - 2) **Alert Messages: Alert Bulletins and For Your Information Notices** – These are significant aviation hazards that may have accident prevention potential, or may describe lesser severity incidents that may be appropriate as safety notices. The Contractor staff of ASRS Analysts identifies these reports during screening. In 2014, ASRS processed about 160 Alert Messages into the ASRS Database (SOW Section 2.2.7).
 - 3) **Special Studies and Emerging Issues** – These are subjects of special study or items representing emerging trends in the aviation community and are processed as Full Form reports as directed by the NASA ASRS Program Director. The list of special studies and emerging issues is a dynamic list based on safety focuses that may arise from requests from FAA and industry, as well as ASRS identified content. This set also includes special topics of safety concerns identified by NASA in consultation with FAA, National Transportation Safety Board (NTSB), and industry groups and reports labeled for selected studies (e.g., Structured Callback, Quick Responses, and Topical Research). Currently, the list of special topics that are being captured are aviation issues such as Unmanned Aerial Vehicles (UAV) reports. Additionally, there is a Structured Callback study progressing on Wake Turbulence and Weather Datalink events (SOW Section 2.3.3).
 - 4) **Discretionary** - These are reports of educational and illustrative value chosen by ASRS Expert Analysts.
- b) **Criminal** - Reports describing events that would be codified under Title 18 of the United States Code of Federal Regulations as criminal shall be given immediately to the NASA ASRS Program Director and are solely excluded from inclusion in the ASRS as described in FAA Advisory Circular 00-46E.
- c) **Accident** - An incoming report presumed to be an “accident” shall be verified by comparison to the NTSB on-line accident files (<http://www.nts.gov/investigations/Pages/default.aspx>). If the event is located in the NTSB online list as a preliminary or final investigation, the report shall be given to the NASA ASRS Program Director. If it is not found in the NTSB online files and it is presumed by the ASRS Expert Analysts that the report describes an accident, the report shall be given to the NASA ASRS Program Director within 5 working days of identification. Any other reports not determined to be accidents shall be processed as an incident report.
- d) **Screen Only** - The Contractor shall classify all reports that are not Full Form, Criminal, or Accident as Screen Only. After returning the ID strip to the reporter, the Contractor shall retain all reports classified

as Screen Only for a period of time, as specified in NASA's government record retention schedule. (The disposition of all original reports will be described in Incident Report Maintenance (SOW Section 2.2.13).

- 2.2.7. ASRS Alert Messages – Alert Bulletins and FYI Notices** - There are two potential categories of Alert Messages: Alert Bulletin (AB) or For Your Information (FYI) Notices. The ASRS Alert Message Coordinator, who is an ASRS Expert Analyst, determines from the screened reports tagged as potential alerts whether a report is an AB or FYI. Additionally, either category of Alert Message may be selected for presentation at the monthly NASA ASRS/FAA Telecon. This process requires expert operational judgment and decision-making skills. The AB category is reserved for those events determined to be potentially significant safety hazards by the Expert Analysts. The FYI category is for those events determined to be of a lesser severity, but important as safety information to be distributed to those parties involved in a potential solution. The AB and FYI categories are mutually exclusive, but can overlap with the monthly NASA ASRS/FAA Telecon items. One report or a collection of reports describing a safety issue of concern can trigger an Alert Message.

After initial selection from the screening process, the ASRS Alert Message Coordinator performs a preliminary evaluation to determine if the report warrants an alert and if additional information is needed to evaluate the incident report. If it is determined that the report shall be developed as an AB or FYI, the ASRS Alert Message Coordinator shall refer the report immediately to the appropriate ASRS Expert Analyst for analysis and possible contact with the reporter for confirmation and ancillary information. Any "time critical" reports, as determined by the ASRS Expert Analysts (i.e., recommended processing in less than 30 calendar days due to safety content), shall be given to the NASA ASRS Program Director within 24 hours of identification. Reports describing events that would be classified as accidents under the jurisdiction of Subparts A & B, NTSB 830.5 (49 CFR 830.5) and contained in the Aeronautical Information Manual (AIM) descriptions shall be given to the NASA ASRS Program Director for disposition. No efforts shall be made to gather additional information from sources other than the incident reporter that may identify any aspect of the report that could compromise the reporter's identity.

Any incident, if not identified in the screening process, can be brought into the Alert Message process at any stage of analysis. This report is tracked as a "Walk-In" Alert Message. The reasons that any potential report may be determined to be inappropriate as an Alert Message shall be documented in a status log for future reference.

- 2.2.8. ASRS Multiple Report Matching** - The Contractor shall match all incoming reports on the same incident and combine them to make an incident record for further analysis and processing. The Government will provide the Multiple Report Matching software program currently used to accomplish this requirement. It is included in the current ASRS Analyst Workbench. The Contractor shall capture the relevant information required by the software necessary to complete the matching process. Typically, 20% of ASRS reports received can be matched (e.g., a Captain report matched with a First Officer report on the same event). In rare cases, several reports will be received on the same incident from the flight crew, cabin crew, mechanic, and air traffic control. Once these separate reports are matched, they become an incident record. Incident records are the completed files entered into the ASRS Database. Retention of these limited data fields of the Multiple Report Matching data is captured for 100% of all reports and is included in the Internal ASRS Screening Dataset that can be used to describe features of the total report intake.

- 2.2.9. ASRS Incident Report Analysis** - Following report screening and multiple report matching, the ASRS Expert Analysts shall analyze the incident report or incident record, capture the data provided, summarize information gathered in their analysis, and provide the analyst's evaluation. The analyzed report shall be coded into the existing ASRS Database coding fields. This process requires expert operational judgment and decision-making skills. During the process of analysis, the analysts shall consult all relevant references (e.g., Jeppesen Charts, aircraft manuals). The analyst reference material is largely available through the on-line ASRS Analyst Workbench software; however, some reference material requires a monthly or annual fee that is the responsibility of the Contractor. The ASRS Expert Analysts shall perform a telephone callback to the incident reporter to obtain any additional information or status of the incident, as necessary. The Contractor shall assure that the conduct of telephone calls to incident reporters follows the procedures required by the approved Telephone Conduct Plan (CDRL Section J.1(a)2 Item 22). If the reporter is not available, a generic message is left requesting the incident reporter to return the call, which may be a collect call to the Analyst. Typically, the rate of telephone callbacks for the ASRS is less than 10% of all Full Form reports.

2.2.10. ASRS De-Identification of Data - Database reports shall be de-identified by removing any information that could lead to the identification of the incident reporter (e.g., reporter name, any third party references, airline name, flight numbers, incriminating location identification, proper names, potential identification from aircraft make/model classification). In addition to the de-identification of the incident reporter, the FAA Advisory Circular 00-46E requires de-identification of any third party references. Information such as location or aircraft make and model is usually retained when relevant to the understanding of the incident occurrence unless this combination would identify the airline and thus, potentially the reporter. There are exceptions needed to protect reporter identity and still capture safety information. These exceptions shall be discussed with the NASA ASRS Program Director when appropriate. Proper de-identification to protect the reporter is the first priority of the ASRS. On all reports, regardless of processing classification, the identification information (top ID portion of the NASA form with the NASA date stamp) is returned to the person who reported the incident as determined by the address provided by the reporter. Following the ID strip decap (i.e., physical removal of the top portion of the reporting form) and de-identification of the contents of the report, the processed data shall be prepared for database entry.

2.2.11. ASRS ID Strip Return - The Contractor shall return the date stamped ID strip to the reporter after analysis is completed. The Contractor shall return the ID strip within the following time standards, unless requested sooner by the reporter and concurrence is obtained from the NASA ASRS Program Director:

Type of Reports	Return No Sooner Than	Return No Later Than
Screened only	14 working days	28 working days
Full reports	30 working days	60 working days
Alert reports	30 working days	60 working days

Deviations from these standards shall be discussed with NASA ASRS Program Director. If a reporter contacts ASRS for return of their ID strip, every attempt shall be made to locate their original report. Once the person who is requesting the ID strip is verified to be the reporter of the incident report by obtaining from the person several descriptors of the report, as addressed by the Contractor in the ASRS and Related Systems Facility Security Plan (CDRL Section J.1(a)2 Item 19), the ID strip shall be returned to the reporter at the address provided on the ID strip. No alternate address shall be used unless approved by the NASA ASRS Program Director. Permission shall be obtained from the reporter to keep their contact information temporarily for any remaining processing steps, at which time their name identification would be removed. Only under these specific conditions is retention of contact information temporarily allowed. No photocopy of an ID strip is allowed.

The Contractor shall accomplish the ID strip mailing through the NASA Ames Research Center Mailroom (Building N255) using NASA-insignia window envelopes showing the reporter's address from the ID strip. The Government is responsible for postage and handling. Included with the ID strip is the NASA ASRS Program Director's cover letter, copy of ASRS tri-fold brochure describing operating rules, and information concerning CALLBACK newsletter E-Notification sign up.

The Contractor shall retain all original reports, tracking records, and other processing records for specified periods of time to comply with NASA's direction related to government record retention schedules for ASRS and Related Systems through secure procedures.

2.2.12. ASRS Database Online (DBOL) Entry - The Contractor shall enter the ACN, coding fields, narrative, analysis, and other appropriate information from each report processed as an incident record. The Contractor shall assure accuracy, completeness, and quality of data entry into the DBOL. All incoming reports selected for Full Form processing must be entered into the DBOL under the following timeframe:

No sooner than 60 calendar days from date of receipt and no later than 90 calendar days from date of receipt.

Therefore, data would be available for public access and ASRS products such as Search Requests and Quick Responses only after the above criteria are met. The quality of the database records shall be maintained at 95% accuracy for content, coding, and keying errors. The Contractor's Quality Assurance

Plan (CDRL Section J.1(a)2 Item 21) shall address these requirements. The DBOL is accessible at the ASRS website: <http://asrs.arc.nasa.gov>

2.2.13. ASRS Incident Report Maintenance - The Contractor shall retain and maintain all original incident reports, attached graphics, phone records, and any other identifying logs for a period of time as specified by NASA to be compliant with government record retention schedules for ASRS and Related Systems. Report tracking records describing which staff members had contact with the report shall be maintained throughout the length of the contract and undetermined future. The Multiple Report Matching (MRM) files shall be retained normally no longer than 60 calendar days for the purpose of matching. Following the MRM process in the ASRS Analyst Workbench and a final de-identification, a limited set of data fields for every ASRS report shall be retained for use in the internal ASRS Screening Dataset. The ASRS Alert Message log shall be retained throughout the contract and in compliance with the government record retention schedule. The Contractor shall maintain these files in a secure area at the Contractor's facility or suitable secure, off-site location approved by NASA. The Contractor shall also maintain the files in a manner such that individual reports can be accessed and reviewed readily if necessary. The Contractor shall provide limited access to these maintained files so that only personnel authorized in accordance with the Contractor's ASRS and Related Systems Facility Security Plan (CDRL Section J.1(a)2 Item 19) are granted access. At the end of the appropriate retention periods, the Contractor shall box report materials, seal the boxes, and contact NASA Ames Research Center Document Control for pick-up and destruction. The government record retention schedule applies to electronic records as well. At the end of the appropriate retention periods, the Contractor shall completely remove electronic digital files from servers and other computers to assure compliance with record retention policies.

2.2.14. ASRS Data Storage, Database Security, and Retrieval - The Contractor shall maintain the current capability necessary for the uninterrupted secure process for data storage and a database system for selected report products. The expected capability requirement is to provide for data input, data storage, and rapid retrieval of processed data. The Contractor shall utilize the Government-provided software to permit direct access to the incident database by the ASRS DBOL service located on the ASRS website. The Contractor shall send a properly formatted copy of the ASRS Database to those organizations and individuals authorized by NASA. For example, the FAA's Aviation Safety Information Analysis System (ASIAS) receives an electronic copy of the ASRS Database on a monthly basis. The Contractor shall maintain the ASRS Database (includes Full Form reports from approximately 1981 to present), internal ASRS incident report screening dataset, and other appropriate data collections for the length of the contract. At the completion of the contract, these data and information derived from the data will be provided to the Government in a form compatible with the operability specified in this document, and with the approval of the NASA ASRS Program Director.

- a) The Contractor shall be solely responsible for the security of all materials entrusted to it. The Contractor shall address, as part of the ASRS and Related Systems IT Security Management Plan (CDRL Section J.1(a)2 Item 14), a description of data and information security requirements, which shall ensure the integrity of the databases and other information. The database elements of the ASRS and Related Systems IT Security Management Plan shall follow the format and address the elements as described in the Office of Management and Budget (OMB) Circular No. A-130, Appendix III and identify how they shall meet each Protection Category described in the NASA Automated Information Security (AIS) Handbook (NHB 2410.9A), Protective Measure Baseline Considerations, Chapter 4, Exhibit 403c, for Sensitivity/Criticality Level 2.

In addition to data security provisions mentioned above, the Contractor shall not release or disseminate any information regarding ASRS without the expressed written approval of the NASA ASRS Program Director.

- b) The Contractor shall back-up all data every 24 hours. The back-up medium shall be located at a secure location remote from the main Contractor facility to avoid any damage that may result from fire, earthquake, flood, or other disasters. This shall be addressed in the Contractor's Contingency Plan (CDRL Section J.1(a)2 Item 20).

2.3. ASRS RESEARCH AND PRODUCTS

The Contractor shall prepare research and operational reports in response to requests from NASA and, with

NASA's authorization, from the FAA and other users of the ASRS data. These requests shall include scientific and technical reports, safety newsletters, an annual report describing program operations, requests for specific information from the ASRS de-identified databases, and informative reports and articles for use in safety and other educational programs. The Contractor in consultation with NASA shall formulate report formats and mechanisms for dissemination.

2.3.1. ASRS Search Requests - The Contractor shall receive database search requests for routine and special studies of the ASRS from a variety of requesters, including FAA, NASA, NTSB, and aviation organizations. The Contractor shall perform ASRS database searches in response to these requests after consultation with the NASA ASRS Program Director. The data available for such requests shall include the data received and processed under this contract as well as the data received prior to this contract. The current ASRS database includes data from 1986. The data processed and stored prior to 1986 is in NASA's possession, but direct access is not possible due to format incompatibilities. For the ASRS, the Contractor shall submit the data searches that have been quality checked for accuracy to the NASA ASRS Program Director within 10 calendar days of the request. Upon approval, the Contractor shall deliver to the requester the requested data within 2 weeks or less from the date of request. If a shorter period of time is needed to meet the request, NASA approval shall precede any release of the data information. The requested data are usually emailed in an Adobe PDF format, but may be provided on computer disk, or printed and bound for mailing by special request.

- a) External – All external requests for data shall be forwarded to the NASA ASRS Program Director. These requests may be received through the ASRS website "Contact Us" feature, email, letters, or via telephone. If at any time a Freedom of Information Act (FOIA) request is received, it shall be forwarded to NASA ASRS Program Director.
- b) Internal – All requests for data originating within the ASRS office are included in this category. These may be in conjunction with special studies, alert messages, presentation material development, or publication preparation.

2.3.2. ASRS Quick Responses - The Contractor shall receive requests for special studies of data. All such requests shall be presented to the NASA ASRS Program Director and subsequently Quick Response parameters communicated to the Contractor. The Contractor shall design and perform analytic studies in response to these requests. These requests may be larger efforts than a database search request and are typically limited to Government organizations such as FAA, NTSB, Congress, and NASA. These requests may be large or small in scope and vary in style and format. The response time may vary based upon the needs of the requester, which could be from 24 hours to several weeks. These Quick Response efforts are individually tailored to the requester needs. The data available for such studies shall include that contained in the ASRS Database.

2.3.3. ASRS Topical Research - The Government will make periodic requests to the Contractor for research on specific topics. These topics are determined by agreements between NASA ASRS and others, including FAA, NTSB, NASA, and aviation organizations. Examples of topical research include secondary coding analysis and structured callback. Secondary coding occurs as a follow-up assessment for particular characteristics of the incident data (for example, taxiing aircraft that cross active runways without clearance). Structured callback uses Supplemental Question Sets for the ASRS staff to contact the submitters of incident reports to gather supplemental information associated with specific topics.

The two topics currently funded are Wake Vortex Encounters and Weather Datalink. These two projects are likely to proceed through the length of the contract. Additional information on these topical research projects is available at the ASRS website (<http://asrs.arc.nasa.gov>), and examples of previous projects can be found under ASRS Research Papers, Publications # 63 and 64.

2.4. ASRS PROGRAM DELIVERABLES

ASRS Program Deliverables include a variety of scheduled and unscheduled meetings, reports, and products with various time limits and due dates. The Contractor shall provide the appropriate personnel to write, format, edit, and produce these deliverables and publications. The Contractor shall provide draft presentations, websites, outreach materials, work processes and related documentation, reports, and material for publication to the NASA ASRS Program Director for review and approval. The Contractor shall provide an Editor to ensure

continuity for publications such as the *CALLBACK* newsletter (SOW 2.4.2(c) and SOW 2.7.2(c)). All presentations of ASRS information and data must be submitted through required NASA processes, including ARC 310 (Review and Authorization Record), NASA Form 1676A (NASA Scientific and Technical Document Availability Authorization) and prior travel approvals by NASA ASRS Program Director.

2.4.1. ASRS Meetings and Teleconferences

- a) ASRS Quarterly Program Briefings – Quarterly progress meetings held at the ASRS Contractor facility. (see CDRL, Section J.1(a)2, Item 4)
- b) ASRS Monthly Teleconferences – Each month the Contractor shall lead one teleconference that may include the FAA and other invited participants. The agenda for this telecon is written by the Contractor and approved by NASA ASRS Program Director. The Contractor's ASRS Alert Message Coordinator and appropriate ASRS Expert Analysts shall attend the telecon to present and address relevant agenda items. The items to be included in the monthly telecon with FAA and other interested parties are determined by the Contractor Program Manager, ASRS Alert Message Coordinator, and the NASA ASRS Program Director. The Contractor shall select approximately four safety concerns derived from fully de-identified reports to present to the participants. Typically, the telecons are one hour in length and are held the second Thursday of every month at 11:00 AM (Pacific) from the Contractor's facility using a web connection capability. The voice capability is provided through a NASA toll-free number. The telecon agenda includes information updates since the last telecon. The minutes from the last telecon are included in a complete package sent to the FAA and other recipients.
 - 1) Timeline: The Contractor shall submit the agenda to the NASA ASRS Program Director for approval at least seven days in advance. The Contractor subsequently shall send the approved telecon package via email to the FAA and other interested parties. This telecon package includes the agenda, de-identified reports of agenda items, and minutes of the last telecon.
- c) ASRS Advisory Committee Meetings – This is a small group of industry and government stakeholders. The Contractor shall provide staff and meeting materials. These meetings typically occur twice a year. The meetings are located within the U.S., often in Washington D.C. The Contractor's support shall include the ASRS Program Manager, and additional Contractor staff, as needed to address relevant agenda items.
 - 1) Timeline: NASA will submit the agenda and guidelines for the preparation of meeting materials to the Contractor at least two weeks in advance. The Contractor shall provide the final meeting materials to NASA for approval at least 3 working days in advance. The Contractor shall provide meeting planning and timely notification of meeting participants per NASA direction.
- d) Semi-Annual Meetings with FAA – The Contractor shall provide staff and meeting materials for the FAA semi-annual meetings. The meetings may be located at NASA Ames Research Center, Washington, DC or coincidental to other programmatic meetings. The Contractor's support shall include the ASRS Program Manager, as appropriate, and additional staff, as needed, to address relevant agenda items.
 - 1) Timeline: NASA will submit an agenda to the Contractor two weeks prior to the meeting. NASA will provide guidelines for the preparation of meeting materials to the Contractor at least seven calendar days in advance. The Contractor shall provide the final meeting materials to NASA for approval at least 3 working days in advance. The Contractor shall record and provide draft minutes of the meetings to NASA at least two weeks following the meetings.
- e) International Confidential Aviation Safety Systems (ICASS) Meetings – The Contractor shall provide staff and meeting materials for the annual ICASS meetings as specified by NASA ASRS Program Director. When the ASRS is not the meeting host, the Contractor shall provide meeting materials as requested and may be requested to travel internationally to the meeting site. When the ASRS is the host of this meeting (approximately once every 3 years), the Contractor's support shall include the participation of the ASRS Program Manager and additional staff, as needed, to address relevant agenda items and meeting requirements. The Contractor shall assist NASA in hosting this international meeting.
 - 1) Timeline: For the ASRS-hosted meetings, the Contractor shall provide meeting planning, arrangements for hotel and meeting room accommodations, explore options for local travel for participants, and timely notification of meeting participants. NASA will submit an agenda one month prior to the meeting. NASA will provide guidelines for the preparation of the meeting materials to the Contractor at least two weeks in advance. The Contractor shall provide the final meeting materials to NASA for approval at least 3 working days in advance. Additionally, a

meeting CD of all participants' presentations will be prepared and distributed to ICASS members. Currently, there are 14 member countries in ICASS.

- f) FAA Air Traffic Procedures Advisory Committee (ATPAC) Meetings – The Contractor shall provide one staff member highly qualified in ATC regulations and procedures to participate as an ASRS representative to the FAA Air Traffic Procedures Advisory Committee (ATPAC) meetings. These meetings are held two times per year and often in Washington DC. The Contractor staff shall prepare material on recent incidents or emerging safety issues reported to the ASRS concerning air traffic issues.
 - 1) Timeline: The Contractor shall provide material intended for these ATPAC meetings to the NASA ASRS Program Director for approval at least one week prior to the meeting dates.
- g) Aviation Industry Safety Meetings, Conferences, Symposium, and Forums – The Contractor shall develop an annual list of events where ASRS participation is anticipated (about 10 per year). The NASA ASRS Program Director will notify the Contractor which of those events ASRS will attend. The Contractor shall provide staff and meeting materials for these meetings as specified by NASA ASRS Program Director. Other meetings may be added to the list as they become known. The Contractor shall provide presentation materials for events that only the NASA ASRS Program Director will be attending.
 - 1) Timeline: The Contractor shall provide material intended for these meetings to the NASA ASRS Program Director for approval at least one week prior to the meeting dates.
- h) Unscheduled Meetings - Since meetings often arise on an ad hoc basis, the NASA ASRS Program Director will inform the Contractor of the level of support required and the location of the meeting with NASA or special visitors. These meetings shall be conducted at either NASA ARC or the Contractor's facility. Other unscheduled meetings shall be planned in advance and may require travel. The NASA ASRS Program Director will provide at least 3 calendar days notification of the requirements for these unscheduled meetings. There are about 20 unscheduled meetings per year.

2.4.2. ASRS Products

- a) ASRS Alert Messages Tracking System and Distribution – The Contractor shall prepare Alert Messages for distribution via email to appropriate parties listed on the Alert Message Distribution lists provided by NASA. The size of the mailing list for each Alert Message varies with regard to the content of each message and its appropriate distribution. A typical message shall involve approximately 1-2 main addressees and 10 information copies. Each Alert Bulletin (AB) or For Your Information (FYI) notices shall be addressed to a Government organization, a manufacturer, and/or others who have the authority to determine the validity of the issue being related in the Alert Messages and provide a solution to prevent a reoccurrence of the event. Information copies are sent to the Government and industry organizations relevant to the alerted item. These messages have potential safety value to their interests and they have the ability to notify participants in the aviation system. The Contractor may receive responses from the Alert Message addressees, information copy organizations, or from others. The Contractor shall maintain and update the Alert Message Tracking System that tracks status and responses to alerts. NASA will provide the Tracking System structure for logging the current and continuing information. The Contractor shall classify all ABs and FYIs and all responses received according to the AB/FYI Classification and Response Codes list.
 - 1) Timeline: The Contractor shall determine the addressees, information copy organizations, and content summary of the Alert Messages and provide this to the NASA ASRS Program Director for review and approval within 25 working days of report receipt, or longer as needed up to 60 days. The Contractor shall assure that no AB or FYI is released prior to 30 calendar days from date of receipt without the concurrence and written approval of the NASA ASRS Program Director.
 - 2) When a response is received, the de-identified responses shall be disseminated to the other original addressees and information copy organizations. The responder shall be identified only by organization, not by the individual's name, within 1 week of receipt and upon concurrence of the NASA ASRS Program Director. Any other requests for data contained in the Alert Message Tracking System or the ABs and FYIs shall be released only with the concurrence of the NASA ASRS Program Director.
- b) ASRS CALLBACK Newsletter – *CALLBACK* is a monthly newsletter produced in collaboration with the Contractor's Analyst Editor, staff, and NASA ASRS Program Director. This publication is written and

created by the Contractor's Expert Analyst Editor and reviewed by staff before online posting on the ASRS website. This product shall continue to be produced in the current style, format, content, and quality. An E-Notification system is active for those subscribers who have requested this service.

- 1) Timeline: The draft content shall be given to the NASA ASRS Program Director for review on the 15th day of each month; the final layouts are due by the 25th day of each month for NASA ASRS Program Director approval. Each issue shall be available electronically on the ASRS website.
- c) ASRS Website – The Contractor shall maintain the ASRS Website: (<http://asrs.arc.nasa.gov>) and ensure continuous availability. Any disruptions must be reported immediately to the NASA ASRS Program Director. The current structure and contents shall be maintained and updated with new information as it becomes available (e.g., *CALLBACK* monthly issues, programmatic briefing). The “ASRS Data Report Sets” shall be renewed every 6 months with the most current and relevant database information. These Data Report Sets shall require NASA ASRS Program Director approval prior to uploading. Any requests for ASRS information, database searches, etc., from the “Contact Us” feature on this site shall be referred to the NASA ASRS Program Director. Any changes to the architecture, content, or layout of the website shall be submitted to the NASA ASRS Program Director for approval.
 - 1) Timeline: Monthly posting of *CALLBACK* newsletter shall be accomplished without interruption following award of contract and completion of the Phase-In period following NASA approvals. Monitoring of “Contact Us” online feature begins immediately following Phase-In of contract. Website updates to ASRS Data Reports Sets shall be provided to the NASA ASRS Program Director for approval 5 months after award of contract.

2.5. OPERATION AND MAINTENANCE OF CONFIDENTIAL CLOSE CALL REPORTING SYSTEM (C³RS)

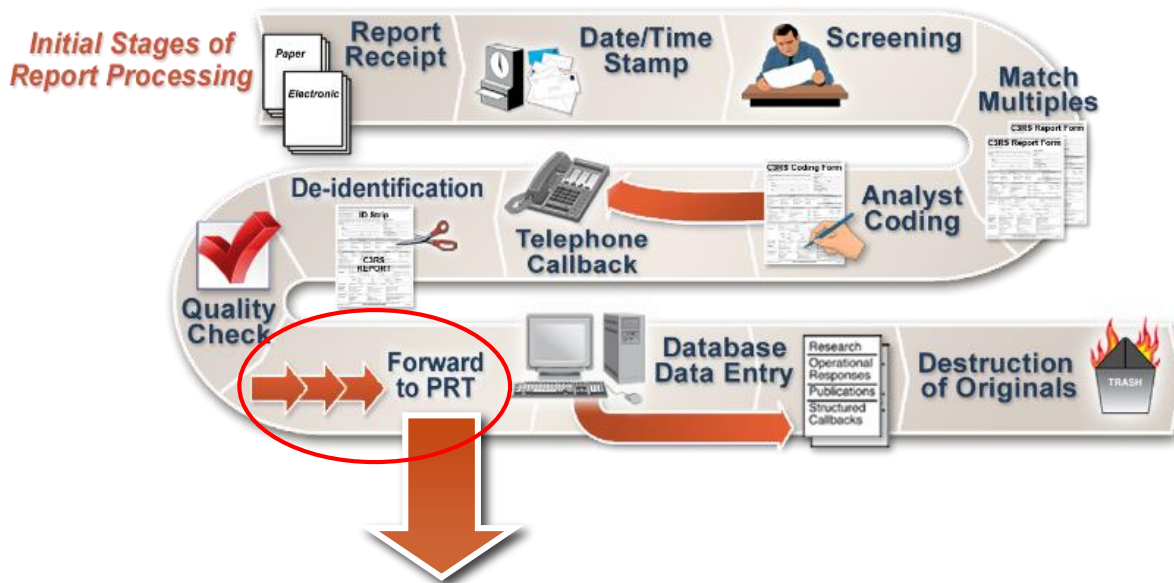
An Interagency Agreement signed in 2010 established the C³RS Project between NASA and the Federal Rail Administration (FRA). The FRA has provided a public news release describing the C³RS as the new railroad safety reporting system for the nation. The current C³RS development and implementation is based upon the NASA ASRS voluntary, non-punitive, confidential reporting model. This replication shall follow in parallel to the ASRS program, but shall be appropriate to the domain and environment of railroad operations. The Contractor shall work with the NASA ASRS/ C³RS Program Director to accomplish C³RS reporting system operations and maintenance in accordance with the C³RS Interagency Agreement between NASA and FRA. Therefore, all C³RS work is expected to follow general descriptions of ASRS Operation and Maintenance (Section 2.2, subsections 2.2.1 – 2.2.14) ASRS Research and Products (Section 2.3, subsections 2.3.1 – 2.3.3), and ASRS Program Deliverables (Section 2.4, subsections 2.4.1 – 2.4.2). Any C³RS exceptions will be described in the following sections below. The requirements to be performed will be coordinated with the NASA ASRS/ C³RS Program Director on a continuous basis based on the work requirements.

The C³RS is a voluntary process wherein engineers, conductors, dispatchers, carmen, machinists, signal maintainers and any other individual associated with the operation of the railroad system may report events or incidents that have been experienced or witnessed as safety hazards. The C³RS confidential safety reporting system includes the processing of reports, specific de-identification protocols to protect the identity of the person reporting and the rail carrier, identification of safety hazards, analysis of data (qualitative and quantitative), operation and maintenance of a large database, and presentation of findings based on the accumulated safety data and information.

As in the ASRS, confidentiality of the reporter is the most critical element to the success of this system. The Contractor shall, at all times during the performance of this contract, protect and preserve the confidentiality of the reporter and any third party references (e.g., rail company, names of individuals involved, etc.). The rail reporting system requirements are specified and described in the FRA's Implementing Memorandum of Understanding (IMOU) approved by each rail carrier, labor organizations, and FRA. The current FRA IMOU's are available through a link from the C³RS website <http://c3rs.arc.nasa.gov>.

The simplified production flow chart of the current C³RS report processing methodology is presented below. The processing steps identified in the flowchart are monitored and tracked by the current version of the C³RS Analyst Workbench.

C³RS REPORT PROCESSING FLOW



- 2.5.1. C³RS Reporting Forms** - Three reporting forms have been developed through collaborative processes with FRA, Volpe and the rail industry. The three forms are titled: Transportation, Mechanical, and Engineering. The forms are available for viewing at <http://c3rs.arc.nasa.gov>. Although use of the NASA forms are not mandatory for submission and reports may be submitted in alternative forms (e.g., letters), the majority of reports are voluntarily submitted on these forms, either through the US Postal Service or by secure electronic submission via the C³RS website. The postage-paid, paper forms are provided by NASA C³RS or found at different locations within the rail carrier's facilities. The Contractor shall provide reporting forms inventory, tracking of report form distribution, and accomplish restocking requests. The Government provides printing and mailing of paper reporting forms. Occasionally, these forms will require revisions based on changing issues and requests for new data fields. The NASA C³RS Program Director will approve any changes to the forms.
- 2.5.2. C³RS Mail Pickup of Reporting Forms** - The Contractor shall obtain safety reports on a daily working day (WD) basis via a secure method from the C³RS Post Office Box (separate from the ASRS PO Box), as defined in the Contractor's ASRS and Related Systems Facility Security Plan (CDRL Section J.1(a)2 Item 19). The annual fee for the Post Office box located at the Moffett Field Post Office, California 94035 is currently \$266. Mail pick-up is excluded on weekends and Federal holidays. These reports are entered manually into the C³RS Analyst Workbench for processing. The number of paper reports submitted to the C³RS in 2014 was 105 (24% of total).
- 2.5.3. C³RS Receipt of Secure Electronic Reporting** – The Contractor shall obtain electronic reports from an encrypted enclave at NASA ARC and internal servers. These reports are submitted from the C³RS website. These reports shall be obtained each WD, excluding weekends and Federal holidays, and entered into the automated C³RS Analyst Workbench for processing. The number of electronic reports submitted to the C³RS in 2014 was 340 (76% of total).
- 2.5.4. C³RS Date Stamping of ID Strips** - Upon receipt, the Contractor shall date stamp each report with the date of receipt on the ID Strip in the upper right-hand corner of the reporting form. Once analysis is complete, this top portion of the reporting form will be severed and returned as proof of submission to the address provided by the person submitting the report. This will remove the reporter's name permanently from the report. Internally, the date of receipt is recorded with the Accession Number (ACN) assigned to that report. An automated date stamp machine will provide the date stamp on paper ID Strips. The date stamping of paper ID Strips for electronically submitted reports will be an electronic facsimile date stamp that has been created uniquely for NASA C³RS. The Government will provide both paper and electronic date stamp capability to the Contractor. The C³RS date stamp emblem is unique to

C³RS and identifiable to rail carrier and FRA inspection as verification of timely submission.

2.5.5. C³RS Internal Report Tracking System - The Contractor shall maintain a tracking system that provides the current status of each incident report as it is processed through the system. This tracking system shall meet the following objectives:

- a) Capture identification of each reviewer and handler throughout the processing stages,
- b) Continue report numbering in succession from the previous year's reports utilizing the Accession Number (ACN) system previously established, and
- c) Maintain the confidentiality of the person reporting throughout report processing, including no numerical identification annotated on the ID strip or any other identity material maintained. The Accession Number (ACN) is never matched with or provided to the person reporting. The Contractor shall be responsible for reporter and third party confidentiality. Any conflict or question concerning confidentiality shall be provided to the NASA C³RS Program Director for resolution within 2 hours of discovery.

2.5.6. C³RS Incident Report Screening and Classification - The Contractor shall read and evaluate each incoming report for hazard identification and classification into defined, predetermined processing and coding categories. This screening process requires expert operational judgment and decision-making skills. The Contractor shall ensure that two C³RS Expert Analysts with experience in the relevant functional area of the report content accomplish this screening independently. The Contractor shall complete the screening of each incident report no more than five (but preferably under three) working days after Post Office Box or electronic receipt of the incoming report, unless prior approval is received from the NASA Program Director. The screening and classification processes for C³RS reports are described in the following paragraphs:

- a) C³RS Report Classifications -The Contractor Expert Analysts shall screen each incoming report for classification. Currently this process is different from the ASRS process, since 100% of all reports submitted are analyzed in the Full Form coding process. The C³RS process description is below:
 - 1) Full Form –Incoming reports are selected 100% for Full Form processing and input into the C³RS Database following analysis by C³RS Expert Analysts. Full Form processing yields a full and lengthy evaluation that captures the safety information provided in the report and is coded into approximately 1,200 coding fields.
 - 2) Alert Messages: Alert Bulletins and For Your Information Notices – This safety product will be instituted during the performance of this contract, but will not be active at the time of contract award. Alert Messages would be determined by the C³RS Expert Analysts as significant rail hazards that may have accident prevention potential or may describe lesser severity incidents that may be appropriate as safety notices.
 - 3) Special Studies and Emerging Issues – These special studies or items representing emerging trends in the railroad community will be identified during the performance of this contract. The NASA C³RS Program Director will provide the details and requests for these studies when they are identified.
 - 4) Criminal -Reports describing events that would be codified under Title 18 of the United States Code of Federal Regulations as criminal shall be given immediately to the NASA C³RS Program Director and are solely excluded from inclusion in the C³RS as described in FRA and rail carriers IMOU.
 - 5) Accident -An incoming report presumed to be an “accident” shall be verified by whether the event reaches the “reporting limits” for mandatory reporting to FRA or is under the “reporting limits” as described in each rail carriers IMOU. If it is determined by the C³RS Expert Analysts that the report describes a reportable accident, the report shall be given to the NASA C³RS Program Director within 5 working days of identification. Any other reports not determined to be reportable accidents shall be included in the incident report process.
 - 6) Screen Only -The C³RS does not have this category of classification at this time.

2.5.7. C³RS Alert Messages – Alert Bulletins and FYI Notices – (Not active at time of contract award. Refer to SOW Section 2.2.7 for general description of ASRS process. When required, these requirements will be negotiated with the Contractor.

2.5.8. C³RS Multiple Report Matching - The Contractor shall match all incoming reports on the same incident event and combine them to make an incident record for further analysis and processing. The

Government will provide the Multiple Report Matching software program currently used to accomplish this requirement. It is included in the current C³RS Analyst Workbench. The Contractor shall capture the relevant information required by the software necessary to complete the matching process. Typically, 14% of C³RS reports received can be matched (e.g., an Engineer report matched with a Conductor report on the same event). In rare cases, several reports will be received on the same incident from others like dispatcher, machinist, and signal maintainer. Once these separate reports are matched, they become an incident record. Incident records are the completed files entered into the C³RS Database. Retention of these limited data fields of the Multiple Report Matching data is captured for 100% of all reports and is included in the Internal C³RS Screening Dataset that can be used to describe features of the total report intake.

- 2.5.9. C³RS Incident Report Analysis** - Following report screening and multiple report matching, the C³RS Expert Analysts shall analyze the incident report or incident record, capture the data provided, summarize information gathered in their analysis, and provide the analyst's evaluation. The analyzed report shall be coded into the existing C³RS Database coding fields. This process requires expert operational judgment and decision-making skills. During the process of analysis, the analysts shall consult all relevant references (e.g., charts, manuals). The analyst reference material is largely available in the C³RS office resources. The C³RS Expert Analysts shall perform a telephone callback to the incident reporter to obtain any additional information or status of the incident, as necessary. The Contractor shall assure that the conduct of telephone calls to incident reporters follows the procedures required by the approved Telephone Conduct Plan (CDRL Section J.1(a)2, Item 22). If the reporter is not available, a generic message is left requesting the incident reporter to return the call, which may be a collect call to the analyst. The rate of telephone callback attempts for the C³RS is 100%.

The concurrence to provide a de-identified report to a rail carrier's Peer Review Teams (PRT) is obtained through the callback phone call to the phone number on top portion of reporting form – ID Strip provided by the person reporting. The C³RS staff will attempt to contact the person two times. After two unsuccessful attempts, a NASA C³RS notification letter will be sent to address provided on ID Strip. The person who provided the report will have 30 days to respond. After stated time frames as expressed in the NASA letter, the de-identified report will be considered available to the rail carrier's PRT.

- 2.5.10. C³RS De-Identification of Data** - Database reports shall be de-identified by removing any information that could lead to the identification of the incident reporter (e.g., reporter name, any third party references, rail carrier name, train numbers, incriminating location identification, proper names, potential identification from engine model classification). In addition to the de-identification of the incident reporter, information such as location or engine model is usually de-identified, but can be generalized when relevant to the understanding of the incident occurrence unless this information would identify the rail carrier and thus, potentially the reporter. There can be exceptions needed to protect reporter identity and still capture safety information. These exceptions shall be discussed with the NASA C³RS Program Director when appropriate. Proper de-identification to protect the reporter is the first priority of the C³RS. On all reports, regardless of processing classification, the identification information (top ID portion of the reporting form with the date stamp) is returned to the person who reported the incident as determined by the address provided by the person reporting. Following the ID strip decap (i.e., physical removal of the top portion of the reporting form) and de-identification of the contents of the report, the processed data shall be prepared for database entry.

The majority of participating rail carriers will have, as part of their own safety system processes, one or more Peer Review Teams (PRT). The interface of NASA C³RS with these carrier's PRTs are initially coordinated through NASA's efforts with the FRA Implementation Team. After approvals of the FRA IMOU with the carrier and coordination with NASA C³RS Program Director, the C³RS Project Manager will begin interactions with the relevant PRTs. As reports are received from the people who work at these carriers, the NASA C³RS staff will begin the report processing and analysis. Once the report has completed the prescribed processing steps, the de-identified, specially prepared report will be provided to the PRT. Management and tracking of this process to assure accuracy is very important. Once assurance of receipt is made by PRT, these tracking records will no longer be required and can be handled in accordance with NASA record retention schedules.

- 2.5.11. C³RS ID Strip Return** - The Contractor shall return the date stamped ID strip to the reporter after analysis is completed. The Contractor shall return the ID strip within the following time standard, unless

requested sooner by the reporter and concurrence is obtained from the NASA C³RS Program Director:

Type of Reports	Return No Sooner Than	Return No Later Than
Full reports ID Strip	30 working days	90 working days

Deviations from this standard shall be discussed with NASA C³RS Program Director. If a reporter contacts C³RS for return of their ID strip, every attempt shall be made to locate their original report. Once the person who is requesting the ID strip is verified to be the reporter of the specific incident report, the ID strip shall be returned to the reporter at the address provided on the ID strip. The verification is accomplished by obtaining from the person on phone call several descriptors of the report that match the report. This process is addressed by the Contractor in the ASRS and Related Systems Facility Security Plan (See CDRL Section J.1(a)2 Item 19). No alternate address shall be used unless approved by the NASA C³RS Program Director. Permission shall be obtained from the reporter to keep their contact information temporarily for any remaining processing steps, at which time their name identification would be removed. Only under these specific conditions is retention of contact information temporarily allowed. No photocopy of an ID strip is allowed.

The Contractor shall accomplish the ID strip mailing through the NASA Ames Research Center Mailroom (Building N255) using NASA-insignia window envelopes showing the reporter's address from the ID strip. The Government is responsible for postage and handling. Included with the ID strip is the NASA C³RS Program Director's cover letter, a copy of the C³RS brochure describing the project, and information concerning the C³RS website.

The Contractor shall retain all original reports, tracking records, and other processing records for specified periods of time to comply with NASA's direction related to government record retention schedules for ASRS and Related Systems through secure procedures.

- 2.5.12. C³RS Database Entry** - The Contractor shall enter the ACN, coding fields, narrative, analysis, and other appropriate information from each report processed as an incident record. The Contractor shall assure accuracy, completeness, and quality of data entry into the C³RS Database. All incoming reports selected for processing must be entered into the C³RS Database under the following timeframe:

No sooner than 60 calendar days from date of receipt and,
No later than 90 calendar days from date of receipt.

The quality of the C³RS Database records shall be maintained at 95% accuracy for content, coding, and keying errors. The Contractor's Quality Assurance Plan shall address these requirements (see CDRL, Section J.1(a)2, Item 21).

- 2.5.13. C³RS Incident Report Maintenance** -The Contractor shall retain and maintain all original incident reports, attached graphics, phone records, and any other identifying logs for a period of time as specified by NASA to be compliant with government record retention schedules for ASRS and Related Systems. Report tracking records describing which staff members had contact with the report shall be maintained throughout the length of the contract and undetermined future. The Multiple Report Matching (MRM) files shall be retained normally no longer than 60 calendar days for the purpose of matching. Following the MRM process in the C³RS Analyst Workbench and a final de-identification, a limited set of data fields for every C³RS report shall be retained for use in the internal C³RS Screening Dataset. At such time when C³RS Alert Messages will be distributed, a log shall be retained throughout the contract and in compliance with the government record retention schedule. The Contractor shall maintain these files in a secure area at the Contractor's facility or suitable secure, off-site location approved by NASA. The Contractor shall also maintain the files in a manner such that individual reports can be accessed and reviewed readily, if necessary during the period of possession. The Contractor shall provide limited access to these maintained files so that only personnel authorized in accordance with the Contractor's ASRS and Related Systems Facility Security Plan are granted access (see CDRL Section J.1(a)2, Item 19). At the end of the appropriate retention periods, the Contractor shall box report materials, seal the boxes, and contact NASA Ames Research Center Document Control for pick-up and destruction. The government record retention schedule applies to electronic records as well. At the end of the appropriate retention periods, the Contractor shall completely remove electronic digital files from servers and other computers to assure compliance with record retention policies.

2.5.14. C³RS Data Storage, Database Security, and Retrieval - The Contractor shall maintain the current capability necessary for the uninterrupted secure process for data storage and a database system for selected report products. The expected capability requirement is to provide for data input, data storage, and rapid retrieval of processed data. The Contractor shall utilize the Government-provided software to permit direct access to the incident database by the C³RS staff and NASA C³RS Program Director. The Contractor shall maintain the C³RS Database (includes Full Form reports from approximately 2011 to present), internal ASRS incident report screening dataset, and other appropriate data collections for the length of the contract. At the completion of the contract, these data and information derived from the data will be provided to the Government in a form compatible with the operability specified in this document, and with the approval of the NASA C³RS Program Director.

- a) The Contractor shall be solely responsible for the security of all materials entrusted to it. (See SOW Section 2.2.14 on this topic as applied here to C³RS). In addition to data security provisions mentioned above, the Contractor shall not release or disseminate any information regarding C³RS without the expressed written approval of the NASA C³RS Program Director.
- b) The Contractor shall back-up all data every 24 hours. The back-up medium shall be located at a secure location remote from the main Contractor facility to avoid any damage that may result from fire, earthquake, flood, or other disasters. This shall be addressed in the Contractor's Contingency Plan (see CDRL, Section J.1(a)2, Item 20).

2.6. C³RS RESEARCH AND PRODUCTS

The Contractor shall prepare research and operational reports in response to requests from NASA and, with NASA's authorization, from the FRA and other users of the C³RS data. These requests shall include scientific and technical reports, safety newsletters, an annual report describing program operations, requests for specific information from the C³RS de-identified database, and informative reports and articles for use in safety and other educational programs. The Contractor in consultation with NASA shall formulate report formats and mechanisms for dissemination.

2.6.1. C³RS Search Requests - The Contractor shall receive database search requests for routine and special studies of the C³RS from a variety of requesters, including FRA, NASA, NTSB, and railroad organizations. The Contractor shall perform C³RS Database searches in response to these requests after consultation with the NASA C³RS Program Director. The data available for such requests shall include the data received and processed under this contract. The current C³RS Database includes data from 2011. For the C³RS, the Contractor shall submit the data searches that have been quality checked for accuracy to the NASA C³RS Program Director within 10 calendar days of the request. Upon approval, the Contractor shall deliver to the requester the requested data within 2 weeks or less from the date of request. If a shorter period of time is needed to meet the request, NASA approval shall precede any release of the data information. The requested data are usually emailed in an Adobe PDF format, but may be provided on computer disk, or printed and bound for mailing by special request.

- a) External – All external requests for data shall be forwarded to the NASA C³RS Program Director. These requests may be received through the C³RS website "Contact Us" feature, email, letters, or via telephone. If at any time a Freedom of Information Act (FOIA) request is received, it shall be immediately forwarded to NASA C³RS Program Director.
- b) Internal – All requests for data originating within the C³RS office are included in this category. These may be in conjunction with special studies, alert messages, presentation material development, or publication preparation.

2.6.2. C³RS Quick Responses – Not active at time of contract award. Refer to SOW Section 2.3.2 for general description of ASRS process. When required, these requirements will be negotiated with the Contractor.

2.6.3. C³RS Topical Research - Not active at time of contract award. Refer to SOW Section 2.3.3 for general description of ASRS process. When required, these requirements will be negotiated with the Contractor.

2.7. C³RS PROGRAM DELIVERABLES

C³RS Program Deliverables include a variety of scheduled and unscheduled meetings, reports, products, and publications with various time limits and due dates. The Contractor shall provide the appropriate personnel to write, format, edit, and produce these deliverables and publications. The Contractor shall provide draft presentations, websites, outreach materials, work processes and related documentation, reports, and material for publication to the NASA C³RS Program Director for review and approval prior to release. The Contractor shall provide an Editor to ensure appropriate expertise for publications such as a proposed newsletter. All presentations of C³RS information and data must be submitted through required NASA processes, including ARC 310 (Review and Authorization Record), NASA Form 1676A (NASA Scientific and Technical Document Availability Authorization) and prior travel approvals by NASA C³RS Program Director.

2.7.1. C³RS Meetings and Teleconferences

- a) C³RS Quarterly Program Briefings – Quarterly progress meetings held at the ASRS/ C³RS Contractor facility. (see CDRL, Section J.1(a)2, Item 4)
- b) C³RS Monthly Teleconferences – Not active at time of contract award. Refer to SOW Section 2.4.1(b) for general description of ASRS process. When required, these requirements will be negotiated with the Contractor.
- c) C³RS User Group Meetings – The C³RS User Group includes representatives of participating rail carriers, PRT members, and industry and government stakeholders. The Contractor shall provide staff and meeting materials. These meetings are typically once a year. The meetings are located within the U.S., often in Washington DC. The Contractor's support shall include the C³RS Project Manager, and additional staff, as needed to address relevant agenda items.
 - 1) Timeline: NASA will submit the agenda and guidelines for the preparation of meeting materials to the Contractor at least one month in advance. The Contractor shall provide the final meeting materials to NASA for approval at least 5 working days in advance. The Contractor shall provide meeting planning and timely notification of meeting participants per NASA direction.
- d) Semi-Annual Meetings with FRA – The Contractor shall provide staff and meeting materials for the FRA semi-annual meetings. The meetings may be located at NASA Ames Research Center, Washington, DC or coincidental to other programmatic meetings. The Contractor's support shall include the C³RS Project Manager, as appropriate, and additional staff to address relevant agenda items.
 - 1) Timeline: NASA will submit an agenda to the Contractor two weeks prior to the meeting. NASA will provide guidelines for the preparation of meeting materials to the Contractor at least seven calendar days in advance. The Contractor shall provide the final meeting materials to NASA for approval at least 3 working days in advance. The Contractor shall record and provide draft minutes of the meetings to NASA at least two weeks following the meetings.
- e) Rail Industry Safety Meetings, Conferences, Symposium, and Forums – The Contractor shall develop an annual list of events where C³RS participation is possible (about 10 per year). The NASA C³RS Program Director will notify the Contractor which of those events C³RS will attend. The Contractor shall provide staff and meeting materials for these meetings as specified by NASA C³RS Program Director. Other meetings may be added to the list as they become known. Additionally the Contractor shall provide presentation materials for events that only the NASA C³RS Program Director will be attending.
 - 1) Timeline: The Contractor shall provide material intended for these meetings to the NASA C³RS Program Director for approval at least one week prior to the meeting dates.
- f) Unscheduled Meetings - Since meetings often arise on an ad hoc basis, the NASA C³RS Program Director will inform the Contractor of the level of support required and the location of the meeting with NASA or special visitors. These meetings shall be conducted at either NASA ARC or the Contractor's facility. Other unscheduled meetings shall be planned in advance and may require travel. The NASA C³RS Program Director will provide at least 3 calendar days notification of the requirements for these unscheduled meetings. There are about 20 unscheduled meetings per year.

2.7.2. C³RS Products

- a) C³RS Alert Messages Tracking System and Distribution – Not active at time of contract award. Refer to SOW Section 2.4.2(a) for general description of ASRS process. When required, these requirements will be negotiated with the Contractor.
- b) C³RS Newsletter – A C³RS monthly newsletter is under development and is expected to be in use for the new contract. It may be posted on the C³RS website. Once finalized, the Contractor shall continue to produce the newsletter in the current style, format, content, and quality. An E-Notification system will be available for those subscribers who have requested this service.
 - 1) Timeline: The draft content shall be given to the NASA C³RS Program Director for review on the 15th day of each month; the final layouts are due by the 25th day of each month for NASA C³RS Program Director approval. Each issue may be available electronically on the C³RS website.
- c) C³RS Website – The Contractor shall maintain the C³RS Website: (<http://c3rs.arc.nasa.gov>) and ensure continuous availability. Any disruptions must be reported immediately to the NASA C³RS Program Director. The current structure and contents shall be maintained and updated with new information as it becomes available (e.g., programmatic briefing). Any requests for C³RS information, database searches, etc., from the “Contact Us” feature on this site shall be referred to the NASA C³RS Program Director. Any changes to the architecture, content, or layout of the website shall be submitted to the NASA C³RS Program Director for approval.
 - 1) Timeline: Monitoring of “Contact Us” online feature begins immediately following Phase-In of contract. Website updates shall be provided to the NASA C³RS Program Director for approval within 5 months after award of contract.

2.8. FORMER PSRS AND SIRS DOCUMENTS AND MATERIALS

The Contractor shall maintain all historic materials and records related to the former Patient Safety Reporting System (PSRS) and Security Incident Reporting System (SIRS) that are located in files and documents provided by the Government. This is in addition to the historic materials and records related to the ASRS and C³RS.

2.9. OVERALL PROGRAM DELIVERABLES

Overall Program Deliverables for ASRS and C³RS in the list below include those addressed above as well as reports and plans required after award.

2.9.1. Reports and Plans

The Contractor shall develop, implement, and maintain security plans and additional plans as described below, which will include both Facility and IT Security procedures and policies, to be incorporated into the contract into the Contract Data Requirements List (CDRL, Section J.1(a)2).

- a) ASRS and Related Systems Facility Security Plan – See CDRL Section J.1(a)2 Item 19, and SOW Appendix 5.3.
- b) ASRS and Related Systems IT Security Management Plan – This plan shall describe the processes and procedures that will be followed to ensure appropriate security of IT resources that are developed, processed, or used under this contract. (See CDRL Section J.1(a) 2 Item 14, and contract Section I.1 *Security Requirements for Unclassified Information Technology Resources* (NFS 1852.204-76).
- c) Contingency Plan - The Contractor shall develop a Contingency Plan to address the actions that would be necessary to assure accessibility and preservation of the ASRS, C³RS, and other databases in the event of a catastrophe (see CDRL Section J.1(a)2 Item 20).
- d) Telephone Conduct Plan -The Contractor shall develop a set of guidelines for analysts' telephone conduct prior to conducting programmatic phone calls (see CDRL Section J.1(a)2 Item 22).

- e) Quality Assurance Plan – The Contractor shall submit, for Government approval, a Quality Assurance Plan to assure accuracy, completeness and quality of data entry (see CDRL Section J.1(a)2 Item 21).
- f) Monthly Program Activities Review – The Contractor shall provide a monthly review to the NASA Program Director on each reporting system. These reviews shall provide an overview of the previous month's activities, including data production statistics that describe intake, types of reporters, cumulative statistics, electronic vs. paper volume, data requests, alert messages, DBOL activity, website activity, and any other pertinent information related to program productivity. Other topics may be requested to be included at such time as the NASA ASRS Program Director can provide to the Contractor. The monthly activity review shall be delivered to NASA by the 7th day after the reporting month's completion.
- g) Quarterly Program Briefings – Quarterly progress meetings held at the ASRS/ C3RS Contractor facility. (see CDRL, Section J.1(a)2, Item 4)
- h) Annual Technical Reports - The Contractor shall provide annual reports to NASA on each reporting system (see CDRL Section J.1(a)2 Item 5).
- i) Final Report - The Contractor shall submit a final report NLT the last day of contract performance which documents and summarizes the results of the entire contract, (see CDRL Section J.1(a)2 Item 4).

3.0. PHASE-IN AND PHASE-OUT

3.1. PHASE-IN (CLIN 01)

- a) The services provided by this contract are vital to the Government's overall effort. Therefore, continuity of these services must be maintained at a consistently high level without disruption. The Contractor is expected to meet full performance requirements upon contract start through the life of the contract.
- b) After identification of a potential new facility (if a relocation from the preceding facility is required), the Contractor shall provide the address of the potential facility to NASA, and provide a facility walk-through with the CO, COR, and NASA Program Manager before finalizing any lease or other property arrangements.
- c) The Phase-in period shall not exceed **60 calendar days** after the start date of the base contract period. The Contractor shall accomplish Phase-in in accordance with the Offeror's Contract Phase-in Plan (to be submitted with proposal) to be incorporated in contract Section J.1(a) Attachment 9.
- d) Once the 60 calendar day phase-in period is complete, the Contractor shall assume full responsibility for the effort covered by the SOW.
- e) During phase-in, the Contractor (at a minimum) shall:
 - 1) Participate in meetings with the predecessor Contractor to identify and discuss problems or areas requiring attention during the phase-in period;
 - 2) Perform all activities described in the Contractor's Phase-in Plan submitted with its proposal, and all activities necessary, to ensure effective transfer of all effort from the predecessor Contractor and readiness to assume full contract performance. At a minimum, Phase-in must include the following: all personnel must be trained and must meet contract requirements; all Government Furnished Property must be inventoried; qualified staff must be available, ARC badging for personnel in process, and ready to assume performance.
 - 3) The Contractor shall provide a copy of the facility lease agreement to the COR, CO, and NASA Program Director within 10 days of contract award.
 - 4) If a facility transfer is required by the Contractor, the coordination and timings of transfer of all equipment, property, and personnel office space is critical. The new facility must be fully operational at end of Phase-In without major disruption to report processing.
 - 5) The Contractor shall demonstrate the new facility is ready and secure, and will be operational at end of Phase-in.
 - 6) The Contractor shall conduct a facility walk-through with the COR, CO, and NASA Program Director to verify facility readiness, and shall respond to any facility deficiencies noted by NASA before the end of Phase-in.
- f) The total cost of all Phase-in activities shall not exceed the price set forth in clause B.1 (a) - Contract Phase-In (CLIN 01). Any costs incurred in excess of this amount shall be unallowable under this or any other government contract.

3.2. PHASE-OUT

- a) Prior to contract completion, a successor Contractor may be selected to perform the work requirements covered by the SOW. The Contractor shall conduct an orderly phase-out of contract activities prior to completion of this contract and assumption of responsibility for the effort described in the SOW by a successor Contractor. The Contractor shall remain responsible for the effort covered by the SOW during phase-out activities.
- b) Upon written notice by the Contracting Officer, the Contractor shall conduct phase-out activities for up to **60 calendar days** prior to the contract completion date, including:
 - 1) Support periodic meetings with the successor Contractor to identify and discuss problems or areas requiring attention during the phase-out period; and
 - 2) Negotiate in good faith, a plan with the successor Contractor to determine the nature and extent of phase-in and phase-out activities required. The plan shall include effective transfer of all effort to the successor Contractor; training of personnel; and any other agreements or steps necessary to ensure a smooth transition between the contracts. The plan shall be subject to the Contracting Officer's approval.
- c) Phase-out activities shall be accomplished in accordance with FAR 52.237-3 "Continuity of Services." The Contractor shall accomplish Phase-out in accordance with the contractor's Phase-Out Plan (see CDRL Section J.1(a)2 Item 6).

4.0. STATEMENT OF WORK ACRONYMS AND TECHNICAL TERMS

ACRONYM	TECHNICAL TERM / DESCRIPTION
AB	Alert Bulletin
ACN	Accession Number
ACO	Administrative Contracting Officer
Alert Message Report	Report describing an aviation incident of a significant safety hazard which has been prepared for dissemination as an Alert Bulletin or FYI notice
ASAP	Aviation Safety Action Program
ASRP	Aviation Safety Reporting Program
ASRS	Aviation Safety Reporting System
ASRS AC	Aviation Safety Reporting System Advisory Committee
ATC	Air Traffic Control
ATPAC	Air Traffic Procedures Advisory Committee
ATSAP	Air Traffic Safety Action Program
C ³ RS	Confidential Close Call Reporting System
CD	Calendar Days
CFR	Code of Federal Regulations
CO	Contracting Officer
COR	Contracting Officer's Representative
COTS	Commercial off-the-shelf (software)
DBOL	Database On Line
Decap	Process of removing the date stamped ID strip from a reporting form for mailing to the reporter
ES	Equipment Specialist
FAA	Federal Aviation Administration
FOIA	Freedom of Information Act
FRA	Federal Railroad Administration
Full Form Report	Report on incident or safety concern selected by category from screened reports for inclusion in a database
FYI	For Your Information messages
Incident Anomaly List	List of the types of anomalies associated with a reported event that corresponds to the specific database coding fields
Incident Record	Database record of all incident reports that describe a single incident
Incident Report	Report on incident or safety concern submitted to a reporting system on a NASA form or by letter (when the form is not available)
IPO	Industrial Property Officer
Mandatory Report	Report that describes an incident event listed as a bold item on the Incident Anomaly List
MRM	Multiple Report Matching
NASA	National Aeronautics and Space Administration
NTSB	National Transportation Safety Board
PRT	Peer Review Teams
PSRS	Patient Safety Reporting System
Screened Reports	All incident reports are read and evaluated by Expert Analysts for each reporting system
SIRS	Security Incident Reporting System
WD	Working Day

5.0. APPENDIX AND ATTACHMENTS TO STATEMENT OF WORK

5.1. ASRS AB/FYI CLASS TRANSACTION LIST

- a) Aircraft Avionics
- b) Aircraft Power Plants
- c) Aircraft Systems
- d) Airport Lighting and Approach Aids
- e) Airports Facility Status and Maintenance
- f) ATC Equipment
- g) ATC Operations
- h) ATC Procedures
- i) Hazard to Flight
- j) Navigation
- k) Other
- l) Security

5.2. ASRS RESPONSE CODE TRANSACTION LIST *(letters are actual codes)*

- B. Action Initiated before AB/FYI Received
- C. Action not within Addressee's Jurisdiction
- F. For Information Only; No Response Expected
- H. Addressee agrees with AB/FYI, but unable to resolve
- I. Action Initiated in Response to AB/FYI; Not Completed
- N. Addressee in Factual Agreement but Sees No Problem
- Q. Information in AB/FYI Insufficient for Action
- T. Action Taken as a result of AB/FYI
- U. Issues Raised by AB/FYI Under Investigation
- W. Addressee Disputes Factual Accuracy of AB/FYI

5.3. ASRS MINIMUM SECURITY CONSIDERATIONS

- a) Procedures for Maintaining Report Confidentiality
 - Reporter anonymity
 - Telephone Inquiry - Verification of Reporter
 - Identified materials
 - File Management
 - Sensitive materials - define
 - Use of reports for publication
 - Release of de-identified reports
 - Telephone privacy and phone call record control
 - P.O. Box Security - Mail pick up
- b) Procedures for Maintaining Facility Security
 - Location of identified materials
 - Door security
 - Access Control
 - Working hours
 - Off-hours
 - Conference room use
- c) Procedures for Visitors
 - Scheduled visitor
 - Unannounced visitor
 - Visitor log
 - Escort criteria
 - Authorized, routine visitor - cleaning staff, repair and maintenance personnel, etc.
 - Unauthorized visitors - burglary, vandal, etc.
- d) Procedures for Facility Data Controls
 - Incident reports
 - Alert message log

- Search request log
- Publication mailing lists
- ASRS research data (structured callback, topical research)
- Password access controls - user identification, authentication, authorization
- Back-up contingency databases and computer files/tapes (describe briefly – Contingency Plan will be detailed description)

e) Procedures for Risk Management

- Assessment of risk
- Hardware failure
- Software failure
- Procedural failure
- Fire, Explosion, Flood, Earthquake
- Theft or Vandalism - physical facility, data records, etc.
- Data corruption - hacker/cracker, virus, unauthorized data alteration, unintentional error
- Personnel screening and training
- Audit capability

5.4. ASRS and RELATED SYSTEMS – LABOR CATEGORIES and DESCRIPTIONS

- a) Program Manager – Responsible for overall management of the Contractor's efforts and provides a responsible interface with the Government for ASRS, C³RS, and all future work with other domain systems, if applicable. Requires at least 10 years of experience in aviation operations with an understanding and exposure to reporting systems, contract management, large multi-level operations management and general knowledge of IT development.
- b) Project Manager – The management for each operational system must have a thorough understanding of safety issues within each of their domains. Managers shall be expected to have the skills and experience required in their specific domains (aviation, railroad, etc.) to credibly represent their specific domain reporting systems to Government and industry organizations. Managers shall have direct experience and competency in managing teams.

Each shall have at least 10 years of direct experience in their domain's operational system. For ASRS, there shall be aviation operations experience related to safety and operational requirements. Direct flight crew, maintenance, ATC, and/or dispatch level of experience is expected, preferably at Part 121 operations level. Direct experience in general aviation operations is also highly desirable. For C³RS, there shall be experience in railroad operations (preferably in Class 1 rail carrier operations). Experience in more than one rail craft is preferable. The rail crafts include Transportation, Mechanical, and Engineering.

If a new domain is added to the ASRS, a Project Manager in the new domain will be required and they shall have equivalent experience in their respective operational domains.

- c) Expert Analysts – Each operational system must have staffing of expert analysts with at least 10 years of professional experience in their domain's operational system. Requires expert operational judgment and decision-making skills.
- ASRS Expert Analysts –Operational areas that shall be supported by the Contractor include, at a minimum:
 - Commercial Airline (14 CFR Part 121 and Part 135)
 - General Aviation (14 CFR Part 91, private, multi-engine, and corporate)
 - Professional pilot
 - Air Traffic Control (Tower, TRACON, ARTCC)
 - Aviation Maintenance (14 CFR Part 91, 135, 121 operations)

The qualifications of the ASRS Expert Analysts shall include, but not be limited to, the following: certificated pilots (representing airline transport pilots, commercial, and general aviation); FAA certified air traffic controllers (representing ARTCC, TRACON, and Tower); and licensed maintenance technicians. Additionally, experience as professional dispatchers and professional flight attendants may be required.

The number and types of Expert Analysts depend on the numbers of reports from those professions and may change throughout the contract. The ASRS Expert Analysts shall be familiar with the documentation and regulations addressing the Aviation Safety Reporting System (Advisory Circular 00-46E & 14 CFR 91.25), all current Federal Aviation Regulations, maintenance regulations (14 CFR 121.369, 14 CFR 65.71-95, 14 CFR 101-107, Subpart D – Repairman, Aircraft Maintenance Manual Requirements), and FAA Controller Policy, as applicable. Currently ASRS is addressed in FAAO JO 7200.20 for air traffic controllers. Typically these positions have required approximately six months of training on the reporting system before having the complete skill set to perform in this position. An ASRS Alert Message Coordinator shall be assigned from the staff of the ASRS Expert Analysts.

- C³RS Expert Analysts – shall possess professional operations experience suitable to evaluate railroad incidents in railroad operational areas, such as railroad yard, interstate, municipal and across U.S. border railroad environments. The C³RS Expert Analysts shall be fully knowledgeable about documentation and regulations of the FRA and railroad carriers, professional and labor organization structures, as applicable.
 - Other domain Expert Analysts may be required in the future, as new reporting system domains are added. The other domain expert analysts shall have equivalent experience in their respective operational domains as ASRS and C³RS Expert Analysts.
- d) Domain Assistant Analysts – provides support to the Expert Analyst staff in each domain's operational system. Typically the Assistant Analyst has a combination of education and experience related to the domain's operational system to provide support to the Expert Analysts with minimal training.
 - e) Lead Information Technology (IT) Specialist – has broad knowledge and capabilities in the areas of very large database management, computer sciences, information technology, statistical analyses, IT security, and database exploration. Has capability to provide services encompassing a variety of technical functions, including internet/intranet site maintenance, network troubleshooting, database coordination, system security checks, maintenance of a reference library, coordination of support services, coordination with NASA ARC Chief Information Officer (CIO) and ARC IT Security offices, and the establishment of cross-platform accessibility across Macintosh and Windows operating systems with ORACLE and other software. Must have experience and competency in leading small teams.
 - f) IT Support Personnel – provide support to the Lead IT Specialist, as needed.
 - g) Research Analyst – personnel with skills in research methodology, writing, human factors, and basic statistics.
 - h) Publications Support – personnel with skills in technical writing, editing, desktop publication, computer graphics, and presentation design; including multi-media.
 - i) Business Management Support Personnel – business management support, including business operations and contract administration for the ASRS, C³RS, and other potential domains through an on-site business manager. Typically this position has been part time. At a minimum, the personnel will provide contract management support necessary to manage and to track labor hours, materials, and associated costs for contract performance. Deliver NASA financial management reports, technical progress, and all other reports as required by contract Section J.1(a) Attachment 2, Contract Data Requirements List (CDRL).
 - j) Administrative Support Personnel – administrative support for tasks such as inventory, answering incoming phone calls for the reporting systems, customer coordination for meetings, shipments of materials, report process tracking, ID strip maintenance, monitor assigned tasks of the facility security plan, and other administrative tasks described in the SOW.